



FY 1998 ENERGY REPORT

PORTLAND AREA

INDIAN HEALTH SERVICE

November 23, 1998

**PORTLAND AREA OFFICE
FY 1998 ENERGY REPORT**

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INTRODUCTION

The goal of the Portland Area Energy Conservation Plan is to support the delivery of quality health care services and meet all requirements of Federal Mandates and Agency Policies regarding Energy Management.

Annual energy consumption goals consistent with the Energy Policy Act (EPA) of 1992 and Executive Order (EO) 12902 have been established for the Portland Area and field Service Units for Fiscal Year (FY) 1985 through FY 2005. Fiscal Year 1985 was established as the base year for the purpose of calculation to forecast the following reductions in energy consumption per gross square foot as required:

- 10% by FY 1995 (EPA of 1992)
- 30% by FY 2005 (Executive Order 12902 - 3/08/94)

A. ANNUAL ENERGY MANAGEMENT DATA REPORT

I. Energy Consumption and Cost Data

The FY energy consumption and cost data for the Portland Area IHS owned and leased facilities is provided in Appendix A, "Energy Consumption and Cost Data."

Provision of vehicle energy consumption data is a General Services Administration (GSA) responsibility. Therefore, no information is reported for GSA vehicles.

II. Energy Conservation Program Summary

A summary of the Portland Area energy conservation program appears in Appendix B.

B. ENERGY CONSUMPTION REDUCTION GOALS

Portland Area's goal to reduce energy consumption by one percent each year **was accomplished** for FY 1986 through FY 1995. A reduction in energy consumption of two percent per year is the goal for FY 1996 through 2005. For FY 1998, a sixteen percent decrease in energy consumption from the FY 1985 level was the target. This goal, 79,358 BTUs per square foot per year, was not achieved for FY 1998 which had an actual usage of 87,439 BTUs per square foot per year. As explained in FY 1997, The new Youth Treatment Center (YTC) in Spokane is a large 24 hour, round the clock, operational facility, employing the latest design criteria for HVAC. YTC consumes much more energy than any other Area Service Unit because of 24 hour

operation. The Area's energy consumption goals can not be met with the addition of this 24 hour facility. If YTC is excluded from the analysis, the Area has achieved the goal of a sixteen percent decrease in energy consumption with a 79,159 BTU per square foot per year for FY 1998. The Area did reduce energy consumption by approximately 2.8 percent over FY 1997 levels.

The Area's future goal is to continue implement Energy Conservation Measures and attempt to reduce energy consumption by two percent each year for years FY 1998 through FY 2005 in accordance with applicable presidential executive order.

The Portland Area, as mandated by EO 12902, has established:

- Prioritization of surveys for all facilities.
- Annual comprehensive audits at ten percent of all facilities, owned or leased. After the completion of energy audits funded in FY 1998, comprehensive audits will have been completed at all Portland Area facilities in accordance with Executive Order #12902.
- Actions to implement economical audit recommendations within 180 days of audit completion.

C. ENERGY SAVINGS PERFORMANCE CONTRACTS

No energy savings performance contracts (ESPCs) have been determined to be justifiable for the Portland Area.

There is no information to report for FY 1998.

D. ENERGY EFFICIENCY AND WATER CONSERVATION PROJECT FUNDING

Non-recurring Maintenance and Improvement funds are used to accomplish energy conservation projects within the Portland Area.

E. AUDITS - ENERGY AND WATER

I. Prioritization Survey

A preliminary energy audit questionnaire was performed at each Area Service Unit in FY 1995. All IHS owned facilities were included in the survey. The survey collected the overall facility information and major energy using systems/equipment information. This information was assessed to produce a prioritization schedule.

II. Comprehensive Facility Audit

Comprehensive energy audits will be performed at a minimum of ten percent of the Portland Area IHS facilities annually. Audits have been prioritized as follows:

ENERGY AUDIT CHRONOLOGY			
Scheduled Year of Audit	Service Unit	Year of Previous Audit	Number of Years Between Audits
1996	Colville – Completed	1986	10
	Neah Bay – Completed	never	N/A
1997	Warm Springs – Completed	1992 (new bldg) 1986 (old)	5 9
	Northern Idaho – Completed	1986	9
1998	Wellpinit – In Progress	1986	12
	Taholah – In Progress	1992	6
	Fort Hall	1994	5
	Northwest Washington	1992	7
	Western Oregon	1992	8
	Yakama	1994	6
	Puyallup	1992	9
	YTC, Spokane	1995	6

As shown in the above, except for the two energy audit currently in progress, the Portland Area has completed all energy audits in accordance with Executive Order #12902.

Plans for implementing justifiable Energy Conservation Measures identified in comprehensive energy audits will be prepared within 180 days (resources permitting) of receipt of energy audit reports.

Program Assessment Mechanism. The following have been identified as performance indicators for the Area energy management program:

- a. Goals for energy consumption have been established.
- b. The majority of the Portland Area Service Units are achieving the established energy consumption goals.
- c. Preliminary energy audits were performed at all IHS facilities.
- d. Prioritization of audits was established based on data from the preliminary energy audits.
- e. All required energy consumption reports have been submitted to Headquarters.
- f. All required energy consumption reports have been submitted on time.

The preliminary energy audits were completed by questionnaire and were based on the questions in Appendix A of the *Architect's and Engineer's Guide to Energy Conservation in Existing Buildings, Volume 1 - Energy Use Assessment and Simulation Methods, April 1990*. Preliminary energy audits were completed at all locations in the Portland Area by September, 1995. The preliminary audits have been used to determine which locations will receive comprehensive energy audits through fiscal year 2001. Comprehensive facility audit information for **IHS owned and leased facilities** for previous years is provided in the following tables.

SUMMARY OF ENERGY AUDITS IN THE PORTLAND AREA

Number of Locations:	12
Energy Audits within last 3 years:	6
Percentage of all facilities with Energy Audits:	100%
Number of New Facilities designed to Energy Standards (within the last 3 years):	0

Total Percentage of Facilities with recent audits
(last 5 years) and/or new facilities
designed to standards: 75%

1. Table for IHS Owned Facilities

Comprehensive Facility Audit for IHS Owned Facilities

INSTALLATION NAME/NUMBER	USE	ENERGY AUDIT PERFORMED	FISCAL YEAR	DESCRIPTION OF ENERGY CONSERVATION OPPORTUNITY	INITIAL COST (\$ (estimated)	PAYBAC K (years)
Colville Service Unit 11551	HCTR	Yes PO6CL008C6	1997	Audit accomplished in-house at Engineering Services. Final report submitted. COMPLETED.	N/A	N/A
				Recommendation to install floor insulation. PENDING.	\$4,500	<2
				Recommendation to adjust HVAC. Air balance report is pending previous project PO0CL455C6. PENDING.	\$200	<1
Fort Hall Service Unit 11491	HCTR		1990	New facility designed to contemporaneous energy standards. COMPLETED	N/A	N/A
		Yes L.A. Olson	1994	Analysis of Energy Usage (to confirm 1990 design). COMPLETED.	N/A	N/A

INSTALLATION NAME/NUMBER	USE	ENERGY AUDIT PERFORMED	FISCAL YEAR	DESCRIPTION OF ENERGY CONSERVATION OPPORTUNITY	INITIAL COST (\$ (estimated)	PAYBAC K (years)
Neah Bay Service Unit 30067	HCTR	Yes PO6NB008C6	1996	Recommendation to reset thermostat settings during unoccupied periods. COMPLETED FY 1997	\$10	0.03
				Recommendation to replace existing window seals. Note: All windows replaced in FY 1997. COMPLETED FY 1997	\$500	4
				Recommendation to replace interior light fixtures with new lamps and ballasts. - Implementation plan in place at the Service Unit. PENDING.	\$7,673	6
				Recommendation to install timer for domestic hot water circulation pump. Implementation nearly complete. Completed.	\$300	9
No. Idaho Service Unit 20944	HCTR	Yes	1997	DOE/FEMP no cost audit. COMPLETED FY 1997.	N/A	N/A

INSTALLATION NAME/NUMBER	USE	ENERGY AUDIT PERFORMED	FISCAL YEAR	DESCRIPTION OF ENERGY CONSERVATION OPPORTUNITY	INITIAL COST (\$ (estimated)	PAYBAC K (years)	
NW Wash. Service Unit 37567	HCTR			Recommendation to retrofit lamps and ballasts for main level of clinic. Action PENDING.	\$2,905	4.8	
				Recommendation to remove fixtures in basement office. Action FUNDED.	\$150	3.3	
				Recommendation to install domestic hot water recirculating pump timer. Action FUNDED.	\$150	1.3	
			Yes Kerner/Fisher	1992	Comprehensive Audit. COMPLETED.	N/A	N/A
		No PD9NW002C6	10/94	Install energy management time clock. COMPLETED	\$2,049	0.2 Years	
				Install floor insulation. COMPLETED	\$21,789	4.5 Years	
				Install occupancy sensors. COMPLETED	\$89	3.7 Years	
			8				

INSTALLATION NAME/NUMBER	USE	ENERGY AUDIT PERFORMED	FISCAL YEAR	DESCRIPTION OF ENERGY CONSERVATION OPPORTUNITY	INITIAL COST (\$) (estimated)	PAYBACK K (years)
				Construct main entrance vestibule. COMPLETED	\$9,785	12.8 Years
	HCTC	No PO7NW002C6	1997	HVAC System Upgrade	\$400,000	
Puyallup Service Unit 35776	HCTR	No	1992	New facility designed to contemporaneous energy standards. COMPLETED.	N/A	N/A
Taholah Service Unit 20611	HCTR	Yes Kerner/Fisher	1992	Comprehensive Audit. COMPLETED.	N/A	N/A
	HCTC	Yes PO8TA008C6	1998	Comprehensive Audit IN PROGRESS		
	HCTR	PD2TA004C6	1992	Install energy management system. COMPLETED	\$2,049	0.5 Years
			1992	Install floor insulation. COMPLETED	\$8,604	1.6 Years
			1992	Install new ventilation system. COMPLETED	\$15,843	12.5 Years

INSTALLATION NAME/NUMBER	USE	ENERGY AUDIT PERFORMED	FISCAL YEAR	DESCRIPTION OF ENERGY CONSERVATION OPPORTUNITY	INITIAL COST (\$ (estimated)	PAYBAC K (years)
Warm Springs Service Unit 11542	HCTR	Yes Anderson	1986	Audit (Old Health Center). COMPLETED	N/A	N/A
		PO7WA002C6	1997	Audit of Quarters. (Cost included in cost of Tribal Health and Wellness Center) PENDING	N/A	N/A
Wellpinit Service Unit 11553	HCTR	Yes Anderson	1986	Audit. COMPLETED.	N/A	N/A
	HCTC	Yes PO8WE003C6	1998	Comprehensive Audit IN PROGRESS		
W. Oregon Service Unit 11540	HCTR	Yes Kerner/Fisher	1992	Install automatic control system for HVAC in FY 1997 in project PO6WN008C6. COMPLETED	N/A	N/A
Yakama Service Unit 19712	HCTR	Yes Anderson	1987	Energy analysis of new construction. COMPLETED	N/A	N/A
	HCTR	Yes L.A. Olson	1994	Analysis of energy usage in the old facility. COMPLETED	N/A	N/A
Youth Treatment Center				New facility designed to current		

INSTALLATION NAME/NUMBER	USE	ENERGY AUDIT PERFORMED	FISCAL YEAR	DESCRIPTION OF ENERGY CONSERVATION OPPORTUNITY	INITIAL COST (\$ (estimated)	PAYBAC K (years)
/ ITC 41217	HCTR	Yes	1995	energy standards. COMPLETED.	N/A	N/A

2. Table for Leased Facilities

Comprehensive Facility Audit for IHS Leased Facilities

INSTALLATION NAME/NUMBER	USE	ENERGY AUDIT PERFORMED	FISCAL YEAR	DESCRIPTION OF ENERGY CONSERVATION OPPORTUNITY	INITIAL COST	PAYBACK
LEASED FACILITIES - PL 94-437 & PL 103-513						
Warm Springs Service Unit 11542	HCTR	No	1992	New facility designed to contemporaneous energy standards. COMPLETED.	N/A	N/A
		PO7WA002C6	1997	Energy Audit Performed on Health & Wellness Center. COMPLETED.	\$18,000	N/A

F. IMPLEMENTATION OF ENERGY EFFICIENCY AND WATER CONSERVATION PROJECTS

The Portland Area supports conservation of energy in federal and tribally owned facilities operated directly by IHS or under P.L. 93-638. The following is a list of energy conservation projects implemented during FY 1997:

FEDERAL FACILITIES

Colville - PD0CO426C6 - Phase III of this project (pending closeout) replaced two out-dated electric (pre 1968) boilers with efficient boilers and installed new energy efficient lighting and windows. A new suspended ceiling was installed which will reduce the volume of conditioned space. This facility was audited in FY 1997 for energy conservation measures. Implementation of ECMs are pending.

Neah Bay - PO6NB008C6 - The building's heat pumps and windows were replaced. Design for a new, efficient roof has been funded and FY 1998 construction is anticipated.

Fort Hall - Engineering Services, Seattle completed a Deep Look for the federally owned facilities. No viable energy conservation measures were discovered. The facilities staff are changing the lighting to more

Yakama - Evaluation of the buildings HVAC is pending an in-house assessment. The assessment will determine the adequacy of the existing HVAC equipment regarding heating/cooling loads.

Indian Tribal Consortium - The ITC Youth Residential Treatment Center, Spokane, was constructed to adhere to the most recent energy efficiency and water reduction guidelines. This facility came online in mid-FY 1996.

Northern Idaho - PO4NI006C6 - This project provided new energy efficient HVAC systems (including heat pumps, ductwork, air handlers and controls) for the main level zone and basement level zone of the Lapwai Indian Health Center in Lapwai, Idaho. In addition, new energy efficient lighting was installed in the basement. This project was closed out in FY 1997. An energy audit was completed in FY 1997. ECMs are pending implementation. - PO7NI006C6 - Energy audit performed by DOE/FEMP was completed. ECM implementation plan is pending.

Northwest Washington (Lummi) - PO7NW002C6 - This project was funded FY 1997 for design and construction to upgrade the clinic's HVAC. New heat pumps and ductwork are to be provided. Completion scheduled for November 1998.

Warm Springs - PO7WA002C6- Warm Springs, Oregon. Energy audit report for the Quarters Units is near completion.

Wellpinit - PO4WE006C6 -This project provided new energy efficient HVAC systems (including heat pumps, ductwork, air handlers and controls) for the main level zone and basement level zone of the David C. Wynecoop Memorial Health Center in Wellpinit, Washington. New energy efficient lighting was installed in the basement.

Western Oregon - PO6WN008C6, Salem, Oregon - Construction for this project was accomplished in FY 1997 to provide an upgraded HVAC system. A four pipe hydronic system was reimplemented with the heat loop energized by new, efficient natural gas boilers. The chilled water loop is cooled by a new, efficient reciprocating chiller. Most of the building's fan coils were either replaced or refurbished. The pneumatic controls were retrofitted for automatic energy conservation modes of operation. High pressure sodium lamps replaced mercury vapor lamps for the building's exterior lighting.

TRIBALLY OWNED FACILITIES

Fort Hall A/SAP, Fort Hall, Idaho - A repair project was completed to replace HVAC units and upgrade perimeter insulation.

Nanitch-Sahallie A/SAP, Salem, Oregon - A project was funded to replace obsolete and inefficient HVAC units including a lighting upgrade to current standards.

Puyallup A/SAP, Tacoma, Washington - A project was completed installing high energy efficiency boilers and associated control systems.

Warm Springs Health and Wellness Center - PO7WA002C6- Warm Springs, Oregon Energy audit report is completed.

Yakama A/SAP, Toppenish, Washington - A project was completed replacing HVAC units and adding proper roof insulation.

G. SOLAR AND OTHER RENEWABLE ENERGY

No information to report.

H. MINIMIZATION OF PETROLEUM-BASED FUEL USE

No information to report.

I. ENERGY EFFICIENT OPERATIONS AND MAINTENANCE PROCEDURES

The Portland Area energy conservation program consists of management emphasis and field support of actions to achieve goals of the Energy Policy Act of 1992 and the Executive Order 12902. The Portland Area Indian Health Service Energy Guideline, dated October 5, 1992, implements operations and maintenance procedures for increased energy efficiency within the service units. Examples of energy consumption reduction methodology are:

- Energy Consumption Data Collection, Analysis, and Reporting
- Energy Audits
- Technical Assistance for Implementing Energy Conservation Measures

J. ENERGY EFFICIENCY IN NEW SPACE

The ITC Youth Residential Treatment Center Project Number 989 utilizes new practices and products for energy efficiency and water conservation. The new facility uses community water, electricity and natural gas as the energy sources. It commenced initial operation in the second quarter of FY 1996.

K. PERFORMANCE EVALUATIONS

No information to report.

L. INCENTIVE AWARDS

No information to report.

M. PROCUREMENT OF ENERGY EFFICIENT PRODUCTS

The October 5, 1992, Portland Area Indian Health Service Guideline, establishes model operations and maintenance purchasing procedures for increased energy efficiency within the service units.

The Portland Area via Engineering Services was able to procure the Department of Energy (DOE) for a "free" energy audit at Northern Idaho. The DOE provides cost-free energy audits in exchange for the implementation of ten (10) year or less ECM payback.

N. ENERGY MANAGEMENT TRAINING

The Area Energy Manager received training in Facilities Orientation I, containing a section on Energy Management.

O. ENVIRONMENTAL BENEFITS OF ENERGY MANAGEMENT ACTIVITIES

The Portland Area Office has instituted a chlorofluorocarbon (CFC) reduction program for heating ventilation and air-conditioning (HVAC) systems at several sites.

FY 1996 and 1997 HVAC upgrades at Neah Bay Clinic (HCTR), Northern Idaho's Lapwai Building #0001 (main HCTR building), Wellpinit's Building #0005 (main HCTR bldg) and the Western Oregon Service Unit eliminated CFC gases in air conditioning operations at these facilities.

APPENDIX A

ENERGY CONSUMPTION AND COST DATA FORMAT

APPENDIX B

ENERGY CONSERVATION PROGRAM SUMMARY FORMAT

ENERGY CONSERVATION PROGRAM SUMMARY

IHS AREA Portland

REPORTED YEAR FY 1998

PREPARED BY Edward Cayous

TITLE General Engineer

PHONE NUMBER (503) 326-3104

DATE SUBMITTED 10/30/98

DIRECT AGENCY EXPENDITURES

Direct expenditures on facility energy efficiency improvements

	Current Fiscal Year	Next Fiscal Year
Annual Expenditures (Thous. \$)	<u>29</u>	<u>55</u>
Annual savings anticipated from expenditures	<u>N/A</u> MMBTU	<u>N/A</u> (Thous. \$)

ENERGY SAVINGS PERFORMANCE CONTRACTS

Number of ESP contracts awarded	<u>0</u>	
Annual savings anticipated from ESP contracts	<u>N/A</u> MMBTU	<u> </u> (Thous. \$)

UTILITY INCENTIVES

Incentives received		<u>0</u> (Thous. \$)
Funds spent in order to receive incentives		<u>0</u> (Thous. \$)
Annual savings anticipated from DSM activities	<u>0</u> MMBTU	<u>0</u> (Thous. \$)

TRAINING

Current year expenditures for energy management training	<u>0</u> (Thous. \$)
Number of personnel trained	<u>0</u>

SUMMARY OF ALTERNATIVE TRANSPORTATION FUEL USAGE

Vehicles (required by EPACT Sec. 308)

Number of dedicated alternative fuel vehicles	<u>N/A</u>
Fuel consumed in dedicated AFVs	<u>N/A</u> (Thous. GEG)
Number of dual-fuel alternative fuel vehicles	<u>N/A</u>
Fuel consumed in dual-fuel AFVs	<u>N/A</u> (Thous. GEG)

Fuel (required by EPACT Sec. 303)

		Annual Consumption	Annual Cost (Thous. \$)
Biodiesel	Thous. Gal.	<u>0</u>	<u>0</u>
Electric	KWH	<u>0</u>	<u>0</u>
Ethanol	Thous. GEG	<u>0</u>	<u>0</u>
Hydrogen	Thous. GEG	<u>0</u>	<u>0</u>
Liquified	Thous. GEG	<u>0</u>	<u>0</u>
Petroleum Gas (LPG)	Thous. GEG	<u>0</u>	<u>0</u>
Methanol	Thous. GEG	<u>0</u>	<u>0</u>
Natural Gas (CNG or LNG)	Thous. GEG	<u>0</u>	<u>0</u>
Other	Thous. GEG	<u>0</u>	<u>0</u>

Wesley M. Bell
Area Facility Manager

Date

Rich Truitt, P.E.
Director, OEHE/PAO

Date

ENERGY CONSUMPTION AND COST DATA

OPDIV PORTLAND
 PREPARED BY EDWARD A. CAYOUS
 PHONE NUMBER (503) 326-3104

REPORTED YEAR FY 1998
 TITLE GENERAL ENGINEER
 DATE SUBMITTED 10/30/98

Buildings/Facilities

Energy Type	Reporting Units	Annual Consumption	Annual ost (thous.)	Unit ost (\$)	Site-Delivere Total MMBtu	Primary (SourceCarbon Emissio Total MMBtu	(Metric Tons)
Electricity	KWH	#####	\$290	#####	19,308.6	65,644.7	969
Fuel Oil	Thous. Gal	2.0	\$2	#####	277.4	277.4	6
Natural Gas	Thous. Cu.	5,579.0	\$20	#####	5,751.9	5,751.9	83
LPG/Propane	Thous. Gal	10.7	\$9	#####	1,020.3	1,020.3	18
Coal	S. Ton	0.0	\$0	#####	0.0	0.0	0
Purch. Steam	MMBtu	0.0	\$0	#####	0.0	0.0	0
Other	MMBtu	0.0	\$0	#####	0.0	0.0	0
	TOTALS		\$320		26,358.3	72,694.4	1,075

Gross Square Feet (thousands) 301.45
 Btu/Gross Square Foot 87,438.3
 \$/Gross Square Foot \$1.06

Tactical Vehicles/Equipment

Energy Type	Reporting Units	Annual Consumption	Annual ost (thous.)	Unit ost (\$)	Total MMBtu
Auto Gas	Thous. Gal	N/A	N/A	/gallon	0.0
Diesel	Thous. Gal	N/A	N/A	/gallon	0.0
LPG/Propane	Thous. Gal	N/A	N/A	/gallon	0.0
Aviation Gas	Thous. Gal	N/A	N/A	/gallon	0.0
Jet Fuel	Thous. Gal	N/A	N/A	/gallon	0.0
Navy Special	Thous. Gal	N/A	N/A	/gallon	0.0
Other	BBtu	N/A	N/A	/Btu	0.0
	TOTALS		\$0		0.0